

44

Access DB#

# SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: J. H. Gellner Examiner #: 76466 Date: 22 Apr 03  
Art Unit: 3643 Phone Number 30 50053 Serial Number: 10658262  
Mail Box and Bldg/Room Location: \_\_\_\_\_ Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: \_\_\_\_\_

Inventors (please provide full names): \_\_\_\_\_

Earliest Priority Filing Date: \_\_\_\_\_

\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Growing plants in sphagnum moss. A living  
flowers  
growth medium. Not sphagnum peat moss.  
potting  
Peat moss is dead, digger  
up moss.  
Bog moss

Search only the internet

## STAFF USE ONLY

Searcher: K.L.  
Searcher Phone #: \_\_\_\_\_  
Searcher Location: \_\_\_\_\_  
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Searcher Prep & Review Time: \_\_\_\_\_  
Clerical Prep Time: \_\_\_\_\_  
Online Time: \_\_\_\_\_

## Type of Search

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AA Sequence (#) \_\_\_\_\_  
Structure (#) \_\_\_\_\_  
Bibliographic \_\_\_\_\_  
Litigation \_\_\_\_\_  
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## Vendors and cost where applicable

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Sequence Systems \_\_\_\_\_  
WWW/Internet \_\_\_\_\_  
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# STIC Search Report

## EIC 3600

STIC Database Tracking Number: 92146

To: Jeff Gellner  
Location: PK5, 3A16  
Wednesday, April 23, 2003

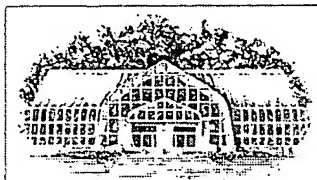
Case Serial Number: 10058262

From: Karen Lehman  
Location: EIC 3600  
PK5-Suite 804, 8T07  
Phone: 306-5783

Karen.Lehman@uspto.gov

### Search Notes

Let me know if you need anything else.



# HOOKED ON GARDENING

**Rx** for the Incurable Gardener

A UNI Biology Botanical Center Newsletter

## Caring For Holiday Cacti

So you couldn't resist when you saw the display of holiday cacti - especially that gorgeous cascade of red flowers on the one hidden slightly behind the sign. You placed your treasure in the shopping cart along with the frozen turkey and egg-nog and now, at home, you are wondering, how should you care for it? Will you be able to make it bloom again?



Many people consider the name Christmas cactus to be a misnomer and are surprised to learn that this plant is, in fact, a cactus. Confusion stems from the plant's general appearance, so different in form from the barrel-shaped or spine-covered plants familiar as stereotypical cacti. But botanists classify plants by flower structure, not by general appearance, and the flowers of the Christmas cactus are structurally similar to those of their desert-dwelling relatives. Of course, there are major differences, since the Christmas cactus is native to the Brazilian tropics, where it grows high in the trees of the rainforest, not rooted in the desert sands.

Classification of this plant is not the only source of confusion. The Christmas cactus is very similar in appearance to its cousins, the Easter cactus (*Schlumbergera gaertneri*) and the Thanksgiving or crab cactus (*Schlumbergera truncata*), also known as (*Zygocactus truncatus*). However, each blooms at a different season as denoted by its name. All three are frequently referred to as Christmas cacti since few people can distinguish among them.

The stem segments of the Christmas cactus have scalloped margins. Blooms are generally found at the stem tips only. The Easter cactus is more likely to bloom between the stem segments, as well as at the stem tips.

The Thanksgiving or crab cactus has two to four pointy teeth along the margins of the stem segments. Blooms are generally found at the stem tips.



### Selection:

Healthy specimens are generally abundant during the holiday season. Therefore, the toughest thing about buying a Christmas cactus is deciding which color to choose. Once you have made up your mind as to color, there are just a couple of pointers to keep in mind. Pick a Christmas cactus bearing large, ready-to-open buds. They are more likely to stay on the plant. Tiny buds seem to drop off between store and home in rebellion to the change of environment.

Choose a plant with firm stems that are a rich, green color, not puckered, curled, yellow or brown - all indications of a moisture problem, either too much or not enough.

***During The Holiday Season:***

Christmas cacti are not fussy plants. Unless their environment is changed while small buds are developing, you are likely to be successful in maintaining the delicate blooms.

**Light:** Plants purchased in bud or bloom should be exposed to bright indirect sunlight during the flowering period; too much sun will cause flowers to fade before their time.

***Following the Holiday Season:***

Once the flowers have dropped, the Christmas cactus loses its drama and is less interesting in form than many other cacti. Its real value is the ease of carrying it over for next year's show.

**Light, Temperature, Moisture, and Fertilizer:** Most sources suggest the Christmas cactus be exposed year-round to bright indirect or curtain-filtered sunlight. Too much light during the dead of summer causes the stems to become flaccid, faded and scorched.

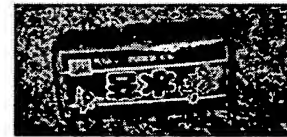
From Christmas until autumn continue to provide 60-70 degree night and day temperatures.

Water when the top half of soil in the container feels dry to the touch. Begin fertilizing when plants are actively growing, from spring through autumn.

The blooms of this plant are truly a Christmas gift. Treat yourself plus those hard to buy for people on your Christmas shopping list with a Holiday Cactus.

## **Sphagnum Moss And Sphagnum Peat Moss**

### **What's The Difference?**



When you're looking at the multitude of products available in garden centers, the wording on packages and labels can be confusing. Sometimes two products that seem the same are different. Sphagnum moss and sphagnum peat moss are a good example.

Sphagnum moss is a long-fibered living plant with sterile and absorbent qualities. Sphagnum peat moss is partially decomposed sphagnum moss. While sphagnum peat moss is a soil amendment standby, sphagnum moss has served in a variety of unusual roles over the years.

Its ability to absorb 20 times its weight in water has led to sphagnum moss being used as a replacement for unobtainable surgical sponges during wartime. Today, it is being tested as a possible final filter for sludge control projects in major municipalities. Its sterility adds nothing to the water as it filters out the solid particles that pollute drinking water.

Mosser Lee Co. of Millston, Wisconsin, is the largest producer and fabricator of sphagnum moss and sphagnum products in the world. The company is continuing to develop innovative uses for long-fibered sphagnum moss in the horticultural field. Mosser Lee's latest products include decorative moss and decorative soil covers for interior landscaping.

The Canadian Sphagnum Peat Moss Association, whose members harvest sphagnum moss from the cool, wet bog regions of Canada, promotes the use of sphagnum peat moss as a garden soil amendment. Canadian sphagnum peat moss will aerate clay, bind sand and prevent the leaching of nutrients. It's also a great value because compressed bales of peat double in volume once opened, resist decomposition in the soil and slowly release nutrients and moisture to the roots, cutting down on the frequency that plants need to be watered and fertilized.

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1/7/1 (Item 1 from file: 5)  
DIALOG(R)File 5:Biosis Previews(R)  
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13575684 BIOSIS NO.: 200200204505

**The role of bryophytes in temperate forest ecosystems.**

AUTHOR: Glime Janice M(a)

AUTHOR ADDRESS: (a)Department of Biological Sciences, Michigan  
Technological University, Houghton, MI, 49931\*\*USA

JOURNAL: Hikobia 13 (3):p267-289 December, 2001

MEDIUM: print

ISSN: 0046-7413

DOCUMENT TYPE: Article

RECORD TYPE: Abstract

LANGUAGE: English

ABSTRACT: There are a number of ways in which bryophytes contribute to the welfare of other plants in the forest. They alter the moisture regime by reducing initial rainfall by trapping it before it enters the soil, holding moisture for a longer period of time, and reducing the evaporation rate from the soil. Epiphytes can maintain a more humid environment but they also can reduce the amount of water reaching the soil. Thick mats of mosses buffer soil temperatures, decreasing the temperature differences between night and day. On the other hand, they cause the permafrost layer to be closer to the surface and delay the warming of soil in spring. The role of bryophytes in nutrient cycling still needs considerable study, but we know that they can have considerable impact in some systems. They often serve as reservoirs, trapping throughfall nutrients. Some of these nutrients may be released immediately, maintaining a concentration similar to that of their environment, while others are stored for release later. In other cases, the nutrients leak from the mosses upon rewetting, increasing the throughfall nutrients. And in some cases, it appears that the return to the soil system may be delayed many years as the bryophyte transfers the nutrients from old to young tissues, year after year. But not all bryophytes behave in the same way, and our meager evidence suggests that those adapted for dry habitats behave differently from those adapted for wet habitats. This area warrants studies to determine if there are generalizations by habitat types or taxonomic affinities that would enable us to predict the roles of specific bryophyte assemblages in the nutrient cycles of forests. Bryophytes contribute in other ways to nutrient relationships through creating suitable environments for mycorrhizae and Cyanobacteria. Mycorrhizae benefit not only from the added moisture but also from the release of nutrients, both organic (sugars) and inorganic. Cyanobacteria seem to benefit mostly from the moist environment, but some actually **\*\*live\*\*** within the cells of **\*\*Sphagnum\*\*** and some liverworts. This association adds usable nitrogen to the soil. The bryophytes also create an environment that sustains roots of some tree species, providing both moisture and leached nutrients. The role of bryophytes as a seedbed seems to depend on the size of the moss, with larger seedlings doing well in larger bryophytes and small seedlings benefitting from thinner mats. Some evidence exists that some mosses produce substances that can enhance germination, whereas others may discourage the herbivores. Direct evidence for germination inhibition by mosses appears to be lacking, but few species have been explored. It is clear from the studies thus far that mosses are not an insignificant life form in the forest, but that their roles in moisture, temperature, nutrient cycling, and regeneration can be significant. It is also clear that we are just beginning to understand their roles and that our knowledge of effects of individual species in each of these roles is extremely meager. It will be interesting to find the relationships between nutrient distribution within the moss and its habitat. And just how does that habitat affect the retention vs release of nutrients? Are the seedlings benefitted by the nutrients, or is it primarily moisture that makes a difference? And just how do the mosses affect seed

predation? Are the observations of reduced predation a result of inhibitors or reduced visibility? Are these benefits present or significant in the deciduous forest?

1/7/2 (Item 2 from file: 5)  
DIALOG(R)File 5:Biosis Previews(R)  
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07801813 BIOSIS NO.: 000092094384

**EFFECTS OF SPHAGNUM MOSS AND URBAN RUNOFF ON BIOAVAILABILITY OF LEAD AND ZINC FROM ACIDIC WETLANDS OF THE NEW JERSEY PINELANDS USA**

AUTHOR: VEDAGIRI U; EHRENFELD J

AUTHOR ADDRESS: IT CORP., 165 FIELDCREST AVE., EDISON, N.J. 08837, USA.

JOURNAL: ENVIRON POLLUT 72 (4). 1991. 317-330. 1991

FULL JOURNAL NAME: Environmental Pollution

CODEN: ENPOE

RECORD TYPE: Abstract

LANGUAGE: ENGLISH

ABSTRACT: The effects of Sphagnum and urban runoff on the bioavailability of metals were tested by adding PbCl<sub>2</sub> and ZnCl<sub>2</sub> to laboratory microcosms constructed of peat substrate with or without **\*\*live\*\*** **\*\*Sphagnum\*\*** spp. and planted with *Acer rubrum* L. seedlings or *Vaccinium macrocarpon* Ait. shoots. We hypothesized that Sphagnum would increase bioavailability through its acidifying action, while urban runoff would decrease availability through increases in alkalinity. Metals were more available to the test plants treated with acidic swampwater than with alkaline runoff. Sphagnum moss caused increased in tissue concentrations in *V. macrocarpon*, but not in *A. rubrum*. The latter species took up more metals when growth on substrate from sites receiving runoff, whereas the former took up more metals from substrate from undisturbed sites, despite the lower substrate metal concentrations. Differences in uptake by the two species may reflect differences in their ability to root in the Sphagnum mat. The results demonstrate that Sphagnum spp. exerts strong species-specific effects on the uptake of metals by vascular plants, and that plant species native to acidic wetlands vary widely in their response to metals in the substrate.

1/7/3 (Item 3 from file: 5)  
DIALOG(R)File 5:Biosis Previews(R)  
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06560988 BIOSIS NO.: 000087003149

**REGENERATION OF BOG LIVERWORTS**

AUTHOR: DUCKETT J G; CLYMO R S

AUTHOR ADDRESS: SCH. BIOL. SCI., QUEEN MARY COLL., LONDON E1 4NS, UK.

JOURNAL: NEW PHYTOL 110 (1). 1988. 119-128. 1988

FULL JOURNAL NAME: New Phytologist

CODEN: NEPHA

RECORD TYPE: Abstract

LANGUAGE: ENGLISH

ABSTRACT: Leafy liverworts of many species regenerate in slabs cut at various depths from peat cores from two widely different sites. Two patterns are recognizable. Species such as *Calypogeia fissa* (L.) Raddi, *Lophocolea* spp., *Lophozia ventricosa* (Dicks.) Dum., *Barbilophozia floerkii* (Web. & Mohr) Loeske and *Riccardia latifrons* (Lindb.) Lindb., which lack underground axes, regenerate most abundantly at the surface but not below 9 cm depth. Other species such as *Kurzia pauciflora* (Dicks.) Grolle, *K. sylvatica* (Evans) Grolle, *Odontoschisma sphagni* (Dicks.) Dum., *O. denudatum* (Mart.) Dum., *Cladopodiella fluitans* (Nees) Buch, *Cephalozia bicuspidata* (L.) Dum. and *C. connivens* (Dicks.) Lindb. which have underground axes, may regenerate poorly at the surface, much

better down to 12 cm or so, and are still found at 24-30 cm depth. These patterns were found in cores from a **\*\*live\*\*** **\*\*Sphagnum\*\***-covered surface and from a much older cut peat surface recently recolonized by liverworts. These results suggest that regeneration is mainly from underground axes rather than from spores or gemmae. The biomass of the underground axes seems to be large. All the axes have fungal associates, and it possible that they are partially saprophytic or parasitic.

1/7/4 (Item 4 from file: 5)  
DIALOG(R)File 5:Biosis Previews(R)  
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02630202 BIOSIS NO.: 000067018263  
**PRODUCTION AND NUTRIENT ECOLOGY OF 3 SPHAGNUM SPECIES IN SOUTHERN FINNISH  
RAISED BOGS**

AUTHOR: PAKARINEN P  
AUTHOR ADDRESS: DEP. BOT., UNIV. HELSINKI, UNIONINKATU 44, SF-00170  
HELSINKI 17, FINL.  
JOURNAL: ANN BOT FENN 15 (1). 1978 15-26. 1978  
FULL JOURNAL NAME: Annales Botanici Fennici  
CODEN: ABOFA  
RECORD TYPE: Abstract  
LANGUAGE: ENGLISH

ABSTRACT: Samples of *S. fuscum* (Schimp.) Klinggr. (from hummocks) and of *S. balticum* (Russow) C. Jens. and *S. majus* (Russow) C. Jens. (from hollows) were analyzed for growth characteristics and for the quantities of some macronutrients (N, P, K, Ca, Mg) and ash in ombrotrophic conditions. The annual growth in length and net production per unit area of full moss cover were lower in *S. fuscum* than in the 2 hollow spp. The hollow *Sphagna* contained significantly less Ca per unit dry weight than *S. fuscum*. The relative accumulation of elements in **\*\*live\*\*** **\*\*Sphagnum\*\*** was studied by calculating the ratio of the nutrient consumption by moss to the atmospheric input (both per unit area), which gave the ranking  $K > P > N > Mg > Ca$ . The element most actively recycled by the moss layer is K. The same ranking was obtained with the ratio of the concentrations of these elements in *Sphagnum* to those in bog pool water. In vertical profiles all 3 spp. had higher concentrations of K, N and P in the live green portion than in the dead brown moss below.

1/7/5 (Item 1 from file: 6)  
DIALOG(R)File 6:NTIS  
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1886022 NTIS Accession Number: TIB/A95-03967

**Schwermetallakkumulation und Kationenaustausch bei Moosen der Gattung  
Sphagnum. Experimentelle Bestimmung von Selektivitaetskoeffizienten. (Heavy  
metal accumulation and cation exchange in mosses of the species 'Sphagnum'.  
Experimental determination of selectivity coefficients)**

(Diss. (Dr.rer.nat.))

Breuer, K.

Technische Univ. Muenchen, Garching (Germany, F.R.). Fachbereich Chemie,  
Biologie und Geowissenschaften.

Corp. Source Codes: 036883006; 9201170

20 Jul 92 169p

Languages: German

Journal Announcement: GRAI9517

In German.

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Country of Publication: Germany, Federal Republic of  
The following cations were investigated: Na, K, Mg, Mn, Cd, Ca, Ni, Ba, Zn, Cu, Pb and Al. Exchange capacities and selectivity coefficients were measured using the bonding strength of the Ca ion as reference value. The investigations were carried out on dried and **\*\*live\*\*** plant material (**\*\*Sphagnum\*\*** magnellanicum, **\*\*Sphagnum\*\*** cuspidatum, Sphagnum rubellum). (orig./EF). (Copyright (c) 1995 by FIZ. Citation no. 95:003967.)

1/7/6 (Item 2 from file: 6)  
DIALOG(R)File 6:NTIS  
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1428827 NTIS Accession Number: DE89005711  
**Productivity of Wet Soils: Biomass of Cultivated and Natural Vegetation**  
Johnston, C. A.  
Oak Ridge National Lab., TN.  
Corp. Source Codes: 021310000; 4832000  
Sponsor: Johnston (Carol A.), Duluth, MN.; Department of Energy, Washington, DC.  
Report No.: ORNL/SUB-84-18435/1  
Dec 88 161p  
Languages: English  
Journal Announcement: GRAI8911; NSA1400  
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NTIS Prices: PC A08/MF A01  
Country of Publication: United States  
Contract No.: AC05-84OR21400

Wet soils, soils which have agronomic limitations because of excess water, comprise 105 million acres of non-federal land in the conterminous United States. Wet soils which support hydrophytic plants are "wetlands", and are some of the most productive natural ecosystems in the world. When both above- and belowground productivity are considered, cattail (Typha latifolia) is the most productive temperate wetland species (26.4 Mg/ha/year). Both cattail and reed (Phragmites australis) have aboveground productivities of about 13 Mg/ha/year. Although average aboveground yields of reed canarygrass (Phalaris arundinacea) are lower (9.5 Mg/ha/year), techniques for its establishment and cultivation are well-developed. Other herbaceous wetland species which show promise as biomass crops include sedge (Carex spp.), river bulrush (Scirpus fluviatilis) and prairie cordgrass (Spartina pectinata). About 40% of wet soils in the conterminous US are currently cultivated, and they produce one-quarter of the major US crops. Most of this land is artificially drained for crops such as corn, soybeans, and vegetables. US wetlands are drained for agriculture at the rate of 223,000 ha/yr. Paddies flooded with water are used to grow rice, cranberries, and wild rice. Forage and **\*\*live\*\*** **\*\*sphagnum\*\*** moss are products of undrained wetlands. A number of federal and state regulations apply to the draining or irrigation of wetlands, but most do not seriously restrict their use for agriculture. 320 refs., 36 tabs. (ERA citation 14:010900)

1/7/7 (Item 1 from file: 10)  
DIALOG(R)File 10:AGRICOLA  
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2668765 87030621 Holding Library: AGL  
**Notes on the cultivation of orchids and insectivorous plants in **\*\*live\*\*** **\*\*sphagnum\*\*** moss**  
Fowlie, J.A.  
La Canada, Calif. : Orchid Digest Corporation.

The Orchid digest. Jan/Mar 1987. v. 51 (1) p. 40-44. ill. CODEN:  
ORDIA  
DNAL CALL NO: 80 OR172  
Language: English  
Subfile: OTHER US (NOT EXP STN, EXT, USDA; SINCE 12/76);  
Document Type: Article

1/7/8 (Item 1 from file: 34)  
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci  
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01113556 Genuine Article#: FX618 Number of References: 33  
Title: EFFECTS OF SPHAGNUM MOSS AND URBAN RUNOFF ON BIOAVAILABILITY OF LEAD  
AND ZINC FROM ACIDIC WETLANDS OF THE NEW-JERSEY PINELANDS  
Author(s): VEDAGIRI U; EHRENFELD J  
Corporate Source: IT CORP,165 FIELDCREST AVE/EDISON//NJ/08837; RUTGERS  
STATE UNIV,DEPT ENVIRONM SCI/NEW BRUNSWICK//NJ/08903; RUTGERS STATE  
UNIV,INST MARINE & COASTAL SCI/NEW BRUNSWICK//NJ/08903  
Journal: ENVIRONMENTAL POLLUTION, 1991, V72, N4, P317-330  
Language: ENGLISH Document Type: ARTICLE  
Abstract: The effects of Sphagnum and urban runoff on the bioavailability  
of metals were tested by adding PbCl2 and ZnCl2 to laboratory  
microcosms constructed of peat substrate with or without \*\*live\*\*  
\*\*Sphagnum\*\* spp. and planted with Acer rubrum L. seedlings or  
Vaccinium macrocarpon Ait. shoots. We hypothesized that Sphagnum would  
increase bioavailability through its acidifying action, while urban  
runoff would decrease availability through increases in alkalinity.  
Metals were more available to the test plants treated with acidic  
swampwater than with alkaline runoff. Sphagnum moss caused increases  
in tissue concentrations in V. macrocarpon, but not in A. rubrum. The  
latter species took up more metals when grown on substrate from sites  
receiving runoff, whereas the former took up more metals from substrate  
from undisturbed sites, despite the lower substrate metal  
concentrations. Differences in uptake by the two species may reflect  
differences in their ability to root in the Sphagnum mat. The results  
demonstrate that Sphagnum spp. exerts strong species-specific effects  
on the uptake of metals by vascular plants, and that plant species  
native to acidic wetlands vary widely in their response to metals in  
the substrate.

1/7/9 (Item 1 from file: 50)  
DIALOG(R)File 50:CAB Abstracts  
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04284726 CAB Accession Number: 20023118407  
Propagation protocol for North American pitcher plants (Sarracenia L.).  
Thomas, D. D.  
Darwin's Backyard Nursery, PO Box 3532, Cullowhee, NC 28723, USA.  
Native Plants Journal vol. 3 (1): p.50-53  
Publication Year: 2002  
ISSN: 1522-8339 --  
Language: English  
Document Type: Journal article  
North American pitcher plants (Sarracenia) can be easily propagated by  
seeds or rhizome divisions. Flowering maturity is reached in 5 to 7 years  
from seeds and 1 to 2 years from divisions. Plants can be grown as  
containerized specimens outdoors in the southeastern US or in bog gardens.  
Successful propagation includes stratification of seeds and providing  
similar environmental conditions to their native habitat with appropriate  
nutrient-poor growing medium, \*\*live\*\* \*\*sphagnum\*\* moss, acidic  
irrigation water, high relative humidity, and light. 6 ref.

1/7/10 (Item 2 from file: 50)  
DIALOG(R)File 50:CAB Abstracts  
(c) 2003 CAB International. All rts. reserv.

03209705 CAB Accession Number: 960304961  
**The \*\*live\*\* \*\*sphagnum\*\* method for germinating rhododendrons.**  
Johnson, B.  
Scarborough, Ontario, Canada.  
American Rhododendron Society Journal vol. 50 (1): p.22, 46  
Publication Year: 1996  
ISSN: 0745-7839 --  
Language: English  
Document Type: Journal article

1/7/11 (Item 3 from file: 50)  
DIALOG(R)File 50:CAB Abstracts  
(c) 2003 CAB International. All rts. reserv.

03034756 CAB Accession Number: 950309412  
**An alternative method of Phalaenopsis stem propagation.**  
Smeltz, K. C.  
1021 Crestover Road, Wilmington, Delaware 19803, USA.  
American Orchid Society Bulletin vol. 64 (5): p.496-500  
Publication Year: 1995  
ISSN: 0003-0252  
6 col. pl. --  
Language: English  
Document Type: Journal article  
A method for propagating Phalaenopsis from flower stem sections is described. The flower spike is severed from the parent plant and cut into sections, each cut being just below a node. The nodal ends of the sections are treated with a powder containing BA, IAA and IBA (formulation given) and are then placed on **\*\*live\*\* \*\*Sphagnum\*\*** moss established in a terrarium. Within 1-3 weeks of treatment, the treated tip swells, 1 month later green leaves begin to appear and within 2-3 months keikis (plantlets) are usually well established.

1/7/12 (Item 4 from file: 50)  
DIALOG(R)File 50:CAB Abstracts  
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02475699 CAB Accession Number: 911960385  
**Effects of Sphagnum moss and urban runoff on bioavailability of lead and zinc from acidic wetlands of the New Jersey Pinelands.**  
Vedagiri, U.; Ehrenfeld, J. G.  
Dep. Environmental Sci., Rutgers Univ. New Brunswick, NJ 08903, USA.  
Environmental Pollution vol. 72 (4): p.317-330  
Publication Year: 1991  
ISSN: 0269-7491 --  
Language: English  
Document Type: Journal article  
The effects of Sphagnum and urban runoff on the bioavailability of metals were tested by adding PbCl<sub>2</sub> and ZnCl<sub>2</sub> to laboratory microcosms constructed of peat substrate with or without **\*\*live\*\* \*\*Sphagnum\*\*** spp. and planted with *Acer rubrum* seedlings or *Vaccinium macrocarpon* shoots. It was hypothesized that Sphagnum would increase bioavailability through its acidifying action, while urban runoff would decrease availability through increases in alkalinity. Metals were more available to the test plants treated with acidic swampwater than with alkaline runoff. Sphagnum moss caused increases in tissue concn in *V. macrocarpon*, but not in *A. rubrum*. The latter species took up more metals when grown on substrate from sites receiving runoff, whereas the former took up more metals from substrate from undisturbed sites, despite the lower substrate metal concn.

Differences in uptake by the two species may reflect differences in their ability to root in the Sphagnum mat. The results demonstrate that Sphagnum spp. exerts strong species-specific effects on the uptake of metals by vascular plants, and that plant species native to acidic wetlands vary widely in their response to metals in the substrate. 33 ref.

1/7/13 (Item 5 from file: 50)

DIALOG(R)File 50:CAB Abstracts

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02201517 CAB Accession Number: 900394274

**Method of washing root crops.**

Val'chevskii, I. A.

USSR Patent

(SU 1 362 435): 3 pp.

Publication Year: 1987

A 17.02.83-SU-3554461, P 30.12.87 --

Language: Russian

Document Type: Patent

The method is applicable in the sugar, starch, alcohol and fruit industries, and aims to avoid environmental pollution and save energy. Procedures are set out for systems sited on sandy and clay soils. Water purified by the system (or maybe merely clarified within it) is used to flume the crop to a 3-stage gravity-flow washer; fresh (and/or purified) water is sprayed onto the crop in the first and last stages. The muddy water obtained is sedimented in parallel clarifiers, then passed through a section containing a bed of **\*\*live\*\* \*\*sphagnum\*\*** moss.

1/7/14 (Item 6 from file: 50)

DIALOG(R)File 50:CAB Abstracts

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00840022 CAB Accession Number: 790377373

**A method of growing the impossible bog orchids.**

Beckner, J.

736 Myrtle Way, St. Petersburg, Florida 33705, USA.

American Orchid Society Bulletin vol. 48 (6): p.556-560

Publication Year: 1979

ISSN: 0003-0252

5 col. pl. --

Language: English

Document Type: Journal article

Orchids such as Calopogon, Pogonia, Spiranthes and Blephariglottis may be grown in plastic containers using a medium of 5 parts perlite, 3 parts vermiculite and 2 parts northern sphagnum with some broken charcoal on top. After the plants are in position **\*\*live\*\* \*\*sphagnum\*\*** should be placed over the surface, especially around each plant. Fertilizers and other chemicals must be avoided and rain water is best for watering. Seeds may be germinated in plastic boxes containing finely-broken charcoal covered with 1 inch of growing medium covered with **\*\*live\*\* \*\*sphagnum\*\***.

1/7/15 (Item 1 from file: 98)

DIALOG(R)File 98:General Sci Abs/Full-Text

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04753056 H.W. WILSON RECORD NUMBER: BGSA02003056 (THIS IS THE FULLTEXT)

**Containers unlimited.**

Conway, Sean

Horticulture v. 99 no2 (Mar./Apr. 2002) p. 80-7

LANGUAGE: English

COUNTRY OF PUBLICATION: United States

WORD COUNT: 2220

ABSTRACT: An imaginative choice of containers can make all the difference. Container planting makes the strongest visual impact when the plants and the container complement each other or when the 2 are combined in a manner that generates greater visual interest than each would possess separately. This effect can be achieved by choosing containers with character and matching plants with the container's form and color. Dramatic effects can also be created using potted trees and shrubs, small plants with eye-catching features, and foliage plants.

TEXT:

WHEN YOU ENTER A ROOM that is empty except for a single chair, that chair demands to be noticed. To achieve the same effect with a container planting, you need to be able to define what it is that catches your eye and separates it from just another plant or group of plants in a pot.

There are two basic components to a container planting: the plants and the container. The strongest visual impact comes about when these two components complement each other, or are combined in a way that generates greater visual interest than either would possess separately.

CHOOSE CONTAINERS WITH CHARACTER

A container can be anything that will hold either soil or water without creating a potentially toxic environment for the plants it will hold. Often, it is the unexpected objects that make the most interesting containers. Several years ago, for instance, while I was cleaning out my barn, I discovered an old, rusty iron pig-feeding trough. It had a wonderfully long, low, horizontal shape, but absolutely no drainage.

I didn't want to ruin the trough's character by riddling it with drainage holes. The solution lay in choosing plants to grow in it that wouldn't require drainage, in this case *Oryza sativa* 'Red Dragon', commonly known as red-leaved rice. This Asian native, which I grow as an annual in my USDA Zone 6b garden and nursery, is perfectly suited to shallow water of four to six inches or less. Its narrow, arched, red leaves were also a perfect complement to the rusted color of the container.

For a finishing touch, I covered the surface of the soil with green river-bottom stones, which I purchased from a well-stocked garden shop. By filling the trough with just enough water to cover the stones, I was able to emphasize the water as another element that distinguished the trough planting from just another potted plant.

This brings up a valuable point: containers that hold water offer a welcome break from the expected. Thanks to the popularity of water gardening, there is a rich and ever-expanding palette of aquatic plants from which to choose. Another of my container water plantings--a marble font purchased from an antique shop--has become an attractive home to corkscrew rush (*Juncus effusus* f. *spiralis*) and floating azolla (*Azolla filiculoides*), a fast-growing aquatic fern. With its leafless, spiraling stems that grow from 18 to 24 inches long, the corkscrew rush is hard to miss. The azolla, which ranges in color from soft green to greenish red, depending on how much sun it receives, so completely covers the surface of the water that it looks like emerald-green moss. This container has a wonderful tactile dimension as well--visitors who touch the azolla are delighted to find that it jiggles like a water bed.

MATCH PLANTS WITH THE CONTAINER'S FORM AND COLOR

When you're deciding what to plant in a container, start with the container's form. A long narrow container, for instance, is best paired with narrow-leaved plants that will emphasize the container's shape. Conversely, low, squat, bowl-shaped containers work best with plants of similar shapes, so that the container will accentuate the roundness of a plant, or emphasize a certain feature, such as horizontal branching. This is certainly the case with dwarf golden larch (*Pseudolarix amabilis* 'Annesleyana'; Zones 4-7). Underplanting the larch with golden pearlwort (*Sagina subulata* 'Aurea') also helps to emphasize the yellow color of the larch's spring leaves.

Container shape alone, however, shouldn't be your only consideration. When a container is extremely large, the issue of what to plant in it can become clouded. In the case of large, bowl-shaped urns, for example, you sometimes need strong, tall vertical plants in order for the scale of the planter to feel right. If the shape calls out for low, mounding plants, but the size of the container calls for ones with pronounced verticality, what should you do? In this case, the best solution is to use both types of plants. Place the vertical plants in the center for the needed height, and the low, mounding plants along the edge to complement the planter.

Container color, too, is important in determining the overall effect. The color of the container can either contrast with the plants or match them. In either case, if the container color is to play an important role in the final composition, take care to choose plants that don't obscure the container, either immediately after you plant it or after the plants have grown in. (This is especially important if you have selected a container for color or its decorative motif.) On the other hand, if softening the look of the container or its edges is what's needed, incorporating trailing plants or vines into the planting will accomplish this. By the time the trailing plants have grown down over the sides of the pot, the container will be visible only through a veil of stems and flowers.

#### LOOK FOR EXCITING PLANT CHOICES

When it comes to choosing plants for container gardening, don't limit yourself to the plants in four-inch pots or six-packs of annuals at your local garden center. Think of it this way: if a plant is growing in a container at a nursery or garden center--whether it's a tree, shrub, perennial, or annual--you should be able to grow it in a container on your patio, at least for a period of time.

I have found that I can comfortably use trees and shrubs bought in containers as large as 15 or even 20 gallons. (Remember: the larger the container, the heavier it is, and the heavier the container, the greater the need for a back brace!) Placed as single specimens in large pots, trees and shrubs make wonderful anchors for groupings of potted plants. I have successfully grown trees and shrubs such as birches, crab apples, smoke bushes, Japanese maples, chamaecypariss, yews, and shrubby dogwoods this way. I have one weeping Japanese maple (*Acer palmatum* 'Filigree'), for instance, that has been in the same container for years, needing only occasional root pruning. Most trees and shrubs, however, do not like to be container-bound for too many years. For these, it's best to display them in containers for one growing season and then move them into the garden at the season's end.

Potted trees and shrubs aren't the only way to make a bold statement. Smaller plants can be equally dramatic, providing they have eye-catching features. The striking, swordlike foliage of *Libertia peregrinans*, an upright-growing plant from New Zealand popular on the West Coast, grows to only 14 inches tall and is well suited for container culture. While it would be lost among its neighbors in a mixed planting, it shines when planted alone in a cylindrical pot. Its coppery orange leaves also blend beautifully with the warm tones of terra-cotta.

#### CONSIDER FOLIAGE

Most container gardeners look for flowers to create a bold effect. Why not give foliage a try instead? Relying on foliage instead of flowers makes sense from several standpoints. To begin with, lush foliage makes a newly planted container look full and finished immediately. In contrast, plants that depend on flowers for their looks will need several weeks of growth before they start to look like anything. Having to depend on a floral display also means that when flowering plants are taking a rest, because of adverse conditions like too much rain or high temperatures, your containers won't look like much. Interesting foliage, on the other hand, will allow you to bridge those gaps.

If I use flowering plants in containers, I tend to use them as

accents. As a rule of thumb, I plant two-thirds of a mixed container with foliage plants and one-third with flowering plants. This ensures that there will always be something interesting to look at.

The key to creating eye-catching containers is figuring out how to make them interesting. Whether you're using containers with bold color or shape or plants with interesting foliage, keep in mind that the combination of the two is what will set your container apart. If your finished product is as eye-catching as that chair in the middle of an empty room, you'll know you're on the right track.

Added material  
photography by WEBB CHAPPELL

#### SEAN CONWAY'S FAVORITE WATER PLANTS FOR CONTAINERS

##### AZOLLA FILICULOIDES

A floating water fern that lays flat on the surface of water--the perfect surface covering for still water in any container. Pairs of tiny, delicate fronds are supported by single strands of fine roots. Ranges from emerald green in the shade to deep burgundy in full sun. Zones 7-10.

##### CHONDROPETALUM TECTORUM

Upright, rushlike, and dark green, with beautiful, brown, bractlike coverings at each node. An excellent accent plant. Plant in a clay pot, submerging the bottom of the pot in three to four inches of water, so that it will wick up moisture. Height: 2 to 3 feet. Width: 2 to 3 feet. Zones 9-10.

##### COLOCASIA 'BLACK MAGIC'

The spectacular, black-leaved elephantear leaves are a dark, dusky purple with reddish stems. Plant in a container where it can wick up moisture; try placing the bottom of the container in three to four inches of water. Height: 36 to 48 inches. Width: will quickly fill large containers. Zones 7b-10.

##### SARRACENIA LEUCOPHYLLA

The white-banded, red-veined pitcher plant. Best planted in containers without drainage, in \*\*live\*\* sphagnum peat moss or sand. Maintain water level two to three inches below the crown of the plant. Needs full sun and a winter dormancy period. Height 24 to 30 inches. Zones 7-9.

Distinctive container planting can be as much about situating the containers as planting them; on a stone wall, against a green background this red-leaved rice (*Oryza sativa* 'Fed Dragon') is impossible to miss. Previous page left; A marble font makes an ineverent watery home for corkscrew rush (*Juncus* of *fusust. spiralis*) and spongy *Azolla filiculoides*. Right: Coppery *Libertia peregrinans*, displayed at its best in a tall terra-cotta pot.

This dwarf golden larch (*Pseudolarix amabilis* 'Annesleyana') is underplanted with golden *Sagina subulata*; both are an intense lemon yellow in the spring.

#### SEAN CONWAY'S FAVORITE WOODY PLANTS FOR CONTAINERS

##### ACER PALMATUM

##### JAPANESE MAPLE

Most upright and weeping forms do well in containers, provided they aren't allowed to dry out. 'Atrolinere', the willow-leaved maple, has long, narrow leaves that will add an interesting texture to any container. Height: 15 to 25 feet. Zones 5/6-8.

##### BETULA 'CRIMSON FROST'

A beautiful, purple-leaved birch that holds its color throughout the season. Use as a specimen tree, or as an anchor for other pots. Plant in

the ground after one season. Height: 45 feet. Width: 35 feet (in 15 years.)  
Zones 4-7.

CHAMAECYPARIS OBTUSA 'NANA'  
DWARF HINOKI FALSE CYPRESS

Beautiful, full, dark green foliage is excellent for brightening up a winter entryway. Plant in frost-resistant pots if you plan on leaving them outside for the winter, and water when winter temperatures are above freezing. Height: 3 feet. Width: 3 feet. Zones 5-8.

CORNUS STOLONIFERA 'SILVER AND GOLD'

A variegated form of the yellow-twig dogwood, with creamy, irregular margins around its leaf borders. This full, leafy shrub will adapt well to a container for one season. Height 7 to 9 feet. Zones 2-7.

COTINUS COGGYRIA 'VELVET CLOAK'

PURPLE SMOKE BUSH

Use in mixed plantings or as a specimen. For best dark purple leaf color, plant in full sun. Height: 10 to 15 feet. Width 10 to 15 feet (less when kept in a container). Zones 4-8.

MALUS 'CANARY' OR 'FIREBURST'

FLOWERING CRAB APPLE

Look for varieties that stay small and offer resistance to fire blight and rust. 'Canary' has tiny yellow fruits, and 'Fireburst' has showy, quarter-inch, bright red fruits. Height: 15-25 feet. Zones 4-7.

CONTAINER KNOW-HOW

When planting a container, start with something interesting, like this painted antique sap bucket (1).

Then, assemble the plants, selecting a variety of complementary shapes, leaf forms, habits, and colors (2).

After filling the container with potting soil, you can begin to plant. For a round container, it's best to position the center plant first, in this case a spiky *Elymus glaucus*. Then, working outward, add foliage plants, such as 'Swinging Linda' coleus and trailing *Dichondra argentea*. Finally, backfill with flowering plants like pink *Petunia integrifolia*, aiming for a balanced arrangement with a final ratio of two-thirds foliage plants to one-third flowering plants (3). When planting a container that will be viewed only from one side, it's a good idea to start in the back with the tallest plants and work your way forward to the shortest.

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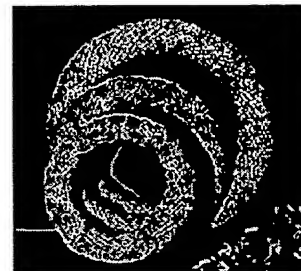


Herb Garden Living Wreath

Hi, I'm Mosser Lee's Moss Living Wreath.

I'm lightweight and filled with pure Long-Fiber Sphagnum Moss, which is capable of absorbing and retaining up to 20 times its weight in water.

I'm superior to straw-filled units, which are incapable of retaining moisture. You can decorate me with live plants which love my nurturing body, cut flowers which can stay moist for weeks or dry flowers. My moss body is firm yet easy to use. Built on a steel frame and wrapped with attractive netting, I am sturdy and virtually unbreakable.



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## Flowers


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A wild bog is covered with a thin carpet of living Sphagnum moss, saturated with water and scattered with small pools. Get down close to the bog and a whole new world opens up. A tiny jungle thriving with interesting wildlife - sedges, mosses, lichens and heathers.

Look out for cranberry. The juicy fruits make cranberry sauce. Bog Rosemary and Cross Leaved Heath have pink flowers shaped like lanterns. Ling heather likes the dry parts of the bog and is probably the safest place to have a rest. Troops of yellow bog asphodel's gather around the edges of the pools. You'll find bog cotton with its fluffy white heads waving in the breeze on the bog surface and bog bean with its spongy roots snorkles in the bog pools.

Lichens form bright cushions on the bog and let us know the air is fresh and clean. On warm days the air smells minty from the heat on the leaves of bog myrtle. In the wet areas where there are plenty of insects the glistening sundews are busy trapping insects on their sticky leaves.



In the soggy,  
spongy parts of  
bogs you can find  
cross-leaved heath  
with its clusters of  
pink lantern-like  
flowers.

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